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<110> Dean, Caroline
Gendall, Anthony

<120> Methods and means for modification of plant characteristics using the vernalisation gene VRN2.

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<141> 2001-07-27

<150> PCT/GB00/00248
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Ala Glu Arg Phe Ile Lys Leu Trp Asn Ser Phe Val Lys Gln Gln Arg
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aatcattttg agcaattttg ccctgtgtta tatgtgtttc acgcacatat ttgcagttgg 3480
attttctcca acagaaagtg gattcactac tggcacatta acaagcacca ataggttttt 3540
attccaactc cgagcactgt ggttgagtaa catcacctca attttttatt atccttaaag 3600

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gggatatata agctttctaa tggtgtcttc agaaatttat aaaatgtaaa tactgatttg 3780
actggtcttt aagatgtgtt taactgtgag gctatttaac gaatagtgtg gatgtgattt 3840
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<210> 16
<211> 803
<212> PRT
<213> Homo sapiens

<400> 16

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Leu Arg Arg His Phe Phe Phe Pro Pro Ser Phe Pro Pro Leu Leu Leu
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Pro Ser Leu Pro Leu Ser Ser Pro Leu Ser Ser Phe Pro Pro Arg Ser
             20                  25                  30

Ala Gly Ala Cys Trp Gly Glu Arg Leu Val Leu Gln Ala Leu Ala Leu
         35                  40                  45

Arg Gly Arg Pro Ala Gly Ser Trp Arg Gly Glu Glu Ala Gly Thr Ala
     50                  55                  60

Met Ala Pro Gln Lys His Gly Gly Gly Gly Gly Gly Gly Ser Gly Pro
 65                  70                  75                  80

Ser Ala Gly Ser Gly Gly Gly Gly Phe Gly Gly Ser Ala Ala Val Ala
                 85                  90                  95

Ala Ala Thr Ala Ser Gly Gly Lys Ser Gly Gly Gly Ser Cys Gly Gly
            100                 105                 110

Gly Gly Ser Tyr Ser Ala Ser Ser Ser Ser Ser Ala Ala Ala Ala Ala
        115                 120                 125

Gly Ala Ala Val Leu Pro Val Lys Lys Pro Lys Met Glu His Val Gln
    130                 135                 140

Ala Asp His Glu Leu Phe Leu Gln Ala Phe Glu Lys Pro Thr Gln Ile
145                 150                 155                 160

Tyr Arg Phe Leu Arg Thr Arg Asn Leu Ile Ala Pro Ile Phe Leu His
                165                 170                 175
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Arg Thr Leu Thr Tyr Met Ser His Arg Asn Ser Arg Thr Asn Ile Lys
            180                 185                 190

Arg Lys Thr Phe Lys Val Asp Asp Met Leu Ser Lys Val Glu Lys Met
        195                 200                 205

Lys Gly Glu Gln Glu Ser His Ser Leu Ser Ala His Leu Gln Leu Thr
    210                 215                 220

Phe Thr Gly Phe Phe His Lys Asn Asp Lys Pro Ser Pro Asn Ser Glu
225                 230                 235                 240

Asn Glu Gln Asn Ser Val Thr Leu Glu Val Leu Leu Val Lys Val Cys
                245                 250                 255

His Lys Lys Arg Lys Asp Val Ser Cys Pro Ile Arg Gln Val Pro Thr
            260                 265                 270

Gly Lys Lys Gln Val Pro Leu Ile Pro Asp Leu Asn Gln Thr Lys Pro
        275                 280                 285

Gly Asn Phe Pro Ser Leu Ala Val Ser Ser Asn Glu Phe Glu Pro Ser
    290                 295                 300

Asn Ser His Met Val Lys Ser Tyr Ser Leu Leu Phe Arg Val Thr Arg
305                 310                 315                 320

Pro Gly Arg Arg Glu Phe Asn Gly Met Ile Asn Gly Glu Thr Asn Glu
                325                 330                 335

Asn Ile Asp Val Asn Glu Glu Leu Pro Ala Arg Arg Lys Arg Asn Arg
            340                 345                 350

Glu Asp Gly Glu Lys Thr Phe Val Ala Gln Met Thr Val Phe Asp Lys
        355                 360                 365

Asn Arg Arg Leu Gln Leu Leu Asp Gly Glu Tyr Glu Val Ala Met Gln
    370                 375                 380

Glu Met Glu Glu Cys Pro Ile Ser Lys Lys Arg Ala Thr Trp Glu Thr
385                 390                 395                 400

Ile Leu Asp Gly Lys Arg Leu Pro Pro Phe Glu Thr Phe Ser Gln Gly
                405                 410                 415

Pro Thr Leu Gln Phe Thr Leu Arg Trp Thr Gly Glu Thr Asn Asp Lys
            420                 425                 430

Ser Thr Ala Pro Ile Ala Lys Pro Leu Ala Thr Arg Asn Ser Glu Ser
        435                 440                 445

Leu His Gln Glu Asn Lys Pro Gly Ser Val Lys Pro Thr Gln Thr Ile
    450                 455                 460

Ala Val Lys Glu Ser Leu Thr Thr Asp Leu Gln Thr Arg Lys Glu Lys
465                 470                 475                 480
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Asp Thr Pro Asn Glu Asn Arg Gln Lys Leu Arg Ile Phe Tyr Gln Phe
485 490 495

Leu Tyr Asn Asn Asn Thr Arg Gln Gln Thr Glu Ala Arg Asp Asp Leu
500 505 510

His Cys Pro Trp Cys Thr Leu Asn Cys Arg Lys Leu Tyr Ser Leu Leu
515 520 525

Lys His Leu Lys Leu Cys His Ser Arg Phe Ile Phe Asn Tyr Val Tyr
530 535 540

His Pro Lys Gly Ala Arg Ile Asp Val Ser Ile Asn Glu Cys Tyr Asp
545 550 555 560

Gly Ser Tyr Ala Gly Asn Pro Gln Asp Ile His Arg Gln Pro Gly Phe
565 570 575

Ala Phe Ser Arg Asn Gly Pro Val Lys Arg Thr Pro Ile Thr His Ile
580 585 590

Leu Val Cys Arg Pro Lys Arg Thr Lys Ala Ser Met Ser Glu Phe Leu
595 600 605

Glu Ser Glu Asp Gly Glu Val Glu Gln Gln Arg Thr Tyr Ser Ser Gly
610 615 620

His Asn Arg Leu Tyr Phe His Ser Asp Thr Cys Leu Pro Leu Arg Pro
625 630 635 640

Gln Glu Met Glu Val Asp Ser Glu Asp Glu Lys Asp Pro Glu Trp Leu
645 650 655

Arg Glu Lys Thr Ile Thr Gln Ile Glu Glu Phe Ser Asp Val Asn Glu
660 665 670

Gly Glu Lys Glu Val Met Lys Leu Trp Asn Leu His Val Met Lys His
675 680 685

Gly Phe Ile Ala Asp Asn Gln Met Asn His Ala Cys Met Leu Phe Val
690 695 700

Glu Asn Tyr Gly Gln Lys Ile Ile Lys Lys Asn Leu Cys Arg Asn Phe
705 710 715 720

Met Leu His Leu Val Ser Met His Asp Phe Asn Leu Ile Ser Ile Met
725 730 735

Ser Ile Asp Lys Ala Val Thr Lys Leu Arg Glu Met Gln Gln Lys Leu
740 745 750

Glu Lys Gly Glu Ser Ala Ser Pro Ala Asn Glu Glu Ile Thr Glu Glu
755 760 765

Gln Asn Gly Thr Ala Asn Gly Phe Ser Glu Ile Asn Ser Lys Glu Lys
770 775 780

Ala Leu Glu Thr Asp Ser Val Ser Gly Val Ser Lys Gln Ser Lys Lys
785 790 795 800

Gln Lys Leu

<210> 17
<211> 22
<212> PRT
<213> Arabidopsis thaliana

<400> 17
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1 5 10 15

His Leu Asn Ser Ser His
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<210> 18
<211> 21
<212> PRT
<213> Arabidopsis thaliana

<400> 18
Cys Pro Phe Cys Ala Glu Ser Tyr Asp Ile Ile Gly Leu Cys Cys His
1 5 10 15

Ile Asp Asp Glu His
20

<210> 19
<211> 20
<212> PRT
<213> Arabidopsis thaliana

<400> 19
Cys Pro Val Cys Ser Leu Lys Val Gly Val Asp Ile Val Ala His Ile
1 5 10 15

Thr Leu His His
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<210> 20
<211> 21
<212> PRT
<213> Arabidopsis thaliana

<400> 20
Cys Ser Phe Cys Lys Arg Glu Phe Arg Ser Ala Gln Ala Leu Gly Gly
1 5 10 15

His Met Asn Val His
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<210> 21
<211> 21
<212> PRT
<213> Arabidopsis thaliana

<400> 21
Cys Pro Phe Cys Ser Asp Tyr Phe Asp Ile Val Ser Leu Cys Cys His
1 5 10 15

Ile Asp Glu Asp His
20

<210> 22
<211> 21
<212> PRT
<213> Arabidopsis thaliana

<400> 22
Cys Pro Phe Cys Ser Asp Asp Tyr Asp Leu Val Glu Leu Cys His His
1 5 10 15

Ile Asp Glu Glu His
20

<210> 23
<211> 22
<212> PRT
<213> Saccharomyces cerevisiae

<400> 23
Cys Pro Ile Cys Leu Arg Lys Phe Asp Asn Leu Gln Ala Leu Asn Ala
1 5 10 15

His Leu Asp Val Glu His
20

<210> 24
<211> 21
<212> PRT
<213> Saccharomyces cerevisiae

<400> 24
Cys Pro Ile Cys Ser Lys Pro Cys Val Gly Glu Asn Gly Leu Gln Met
1 5 10 15

His Met Ile Ile His
20

<210> 25
<211> 22
<212> PRT
<213> Schizosaccharomyces pombe

<400> 25
Cys Pro Tyr Cys Glu Ile Lys Cys Lys Arg Lys Asp Leu Leu Lys Arg
1 5 10 15

His Ile Gln Arg Phe His
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<210> 26
<211> 22
<212> PRT
<213> Caenorhabditis elegans

<400> 26
Cys Asp Val Cys Ala Phe Lys Cys Ser Ser Tyr Gln Thr Leu Glu Ala
1 5 10 15

His Leu Thr Ser Asn His
20

<210> 27
<211> 22
<212> PRT
<213> Caenorhabditis elegans

<400> 27
Cys Pro Val Cys Glu Leu Val Ile Pro Thr Glu Lys Gly Leu Lys Asn
1 5 10 15

His Met Asn Gln Lys His
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<210> 28
<211> 22
<212> PRT
<213> Caenorhabditis elegans

<400> 28
Cys Pro Ile Cys Lys Cys Glu Cys Ser Gly Arg Glu Asp Cys Gln Leu
1 5 10 15

His Met Tyr Ala Ser His
20

<210> 29
<211> 22
<212> PRT
<213> Drosophila melanogaster

<400> 29
Cys Pro Tyr Cys Arg Arg Thr Phe Ser Cys Tyr Tyr Ser Leu Lys Arg
1 5 10 15

His Phe Gln Asp Lys His
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<210> 30
<211> 22
<212> PRT
<213> Drosophila melanogaster

<400> 30
Cys Pro Ile Cys Tyr Ala Val Ile Arg Gln Ser Arg Asn Leu Arg Arg
1 5 10 15

His Leu Glu Leu Arg His
20

<210> 31
<211> 22
<212> PRT
<213> Drosophila melanogaster

<400> 31
Cys Cys Phe Cys Ser Met Cys Phe Glu Ser Val Gln Glu Leu Val Arg
1 5 10 15

His Leu Ser Gly His His
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<210> 32
<211> 22
<212> PRT
<213> Homo sapiens

<400> 32
Cys Pro Phe Cys Arg Ala Leu Phe Lys Ala Lys Thr Ala Leu Glu Ala
1 5 10 15

His Ile Arg Ser Arg His
20

<210> 33
<211> 22
<212> PRT
<213> Homo sapiens

<400> 33
Cys Pro Trp Cys Thr Leu Asn Cys Arg Lys Leu Tyr Ser Leu Leu Lys
1 5 10 15

His Leu Lys Leu Cys His
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<210> 34
<211> 22
<212> PRT
<213> Homo sapiens

<400> 34
Cys Glu Val Cys Ala Phe Ala Cys Lys Arg Lys Tyr Glu Leu Gln Lys
1 5 10 15

His Met Ala Ser Gln His
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<210> 35
<211> 22
<212> PRT
<213> Mus musculus

<400> 35
Cys Pro Tyr Cys Pro Pro Asn Gly Arg Val Arg Gly Asp Leu Val Glu
1 5 10 15

His Leu Arg Gln Ala His
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<210> 36
<211> 21
<212> PRT
<213> Mus musculus

<400> 36
Cys Arg Phe Cys Ala Lys Val Phe Gly Ser Asp Ser Ala Leu Gln Ile
1 5 10 15

His Leu Arg Ser His
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<210> 37
<211> 22
<212> PRT
<213> Rattus norvegicus

<400> 37
Cys Asn Tyr Cys Pro Glu Met Phe Ala Asp Ile Asn Ser Leu Gln Glu
1 5 10 15

His Ile Arg Val Ser His
20

<210> 38
<211> 22
<212> PRT
<213> Xiphophorus maculatus

<400> 38
Cys Pro His Cys Glu Phe Arg Cys Ala Asp Gln Ser Asn Leu Lys Thr
1 5 10 15

His Ile Lys Ser Lys His
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<210> 39
<211> 39
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(39)

<400> 39
gaa aag caa ttc atg cat ctt tgg aac tcg ttt gta aga 39
Glu Lys Gln Phe Met His Leu Trp Asn Ser Phe Val Arg
1 5 10

<210> 40
<211> 13
<212> PRT
<213> Arabidopsis thaliana

<400> 40
Glu Lys Gln Phe Met His Leu Trp Asn Ser Phe Val Arg
1 5 10

<210> 41
<211> 39
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(24)

<400> 41
gaa aag caa ttc atg cat ctt tga aactcgtttg taaga 39
Glu Lys Gln Phe Met His Leu
1 5

<210> 42
<211> 7
<212> PRT
<213> Arabidopsis thaliana

<400> 42
Glu Lys Gln Phe Met His Leu
1 5

<210> 43
<211> 33
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(33)

<400> 43
tgt ggt agc ttc aag ggg ctg caa ttt cat ttg 33
Cys Gly Ser Phe Lys Gly Leu Gln Phe His Leu
1 5 10

<210> 44
<211> 11
<212> PRT
<213> Arabidopsis thaliana

<400> 44
Cys Gly Ser Phe Lys Gly Leu Gln Phe His Leu
1 5 10

<210> 45
<211> 54
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(36)

<400> 45
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Cys Gly Ser Phe Lys Val Gly Asn Tyr Tyr Asn
1 5 10

tttcattt 54

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<211> 11
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<400> 46
Cys Gly Ser Phe Lys Val Gly Asn Tyr Tyr Asn
1 5 10

<210> 47
<211> 1722
<212> DNA
<213> Arabidopsis thaliana

<400> 47
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gcattgagtt tatcgctatg acgtagggaa attctaattt aggggaggcc tcagagtttg 180
cactaacttc ataatcggct cttgacgttg ttgagtgtaa ttgaacaaga atgtgtaggc 240
agaattgtcg cgcgaaatcc tcaccggagg aagtgatttc aactgatgag aatctcttga 300
tatattgtaa acctgttcga ctatataaca tctttcacct tcgctctcta ggcaacccat 360
cgtttcttcc aagatgcttg aactacaaaa ttggagcaaa gcgcaaaaga aagtcaagat 420
ctactgggat ggtagttttc aactataagg attgtaataa cacattacag aaaactgaag 480
ttagggagga ttgttcttgt ccattttgct ctatgctatg tggtagcttc aaggggctgc 540
aatttcattt gaattcatct catgatttat ttgaatttga gttcaagctt ttcgaagaat 600
accagacagt taatgtttct gtaaaactta attccttcat atttgaggaa gaaggaagtg 660
atgacgataa atttgagccc ttctctctct gctcgaaacc tcgtaagcgg agacaaagag 720
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ttcagaaacg ccaattctat cattctcaca gagtccagcc aatggcgctt gagcaagtaa 1080
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actcgtttgt aagaaaacaa agggttatag cagatggtca tatctcttgg gcatgtgaag 1260
cattttcaag attttacgag aaagagttgc accgttactc atcactcttc tggtgttgga 1320
gattgttttt gattaaacta tggaaccatg gacttgtcga ctcagccacc atcaacaact 1380
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acagtgtgga tcgtcccagt gactcaaaca ccaacaacaa taacattgtg gatcatccca 1500
atgacataaa caacaagaac aatgttgaca acaaggacaa taacagcaga gacaaagtaa 1560
ttaaatagga aaatctccgg cttttatgat accgatttat cggattgtaa cttattcttc 1620
tttcttaaaa aattgtttag gagcaaacaa atttttata tgttagtgta ttcaactgat 1680
tacattttta gttaaaaaaa aaaatggatt ctgcttataa ct 1722

<210> 48
<211> 40
<212> DNA
<213> Arabidopsis thaliana

<400> 48
gaaaagcaat tcatgcatct ttggaactcg tttgtaagaa 40

<210> 49
<211> 40
<212> DNA
<213> Arabidopsis thaliana

<400> 49
gaaaagcaat tcatgcatct ttgaaactcg tttgtaagaa 40

<210> 50
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<221> misc_feature
<222> (4)..(7)
<223> n=a or g or c or t

<220>
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<400> 50
cttnnnnaag 10

<210> 51
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 51
gagaagtagt tacctttgtt ttcttacaga agagt 35

<210> 52
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR product

<400> 52
gaaaagcaat tcatgcatct ttggaactct tctgtaagaa 40

<210> 53
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR product

<400> 53
gaaaagcaat tcatggatct ttgaaactct tctgtaagaa 40

<210> 54
<211> 367
<212> PRT
<213> Homo sapiens

<400> 54
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1 5 10 15

Asn Lys Pro Gly Ser Val Lys Pro Thr Gln Thr Ile Ala Val Lys Glu
20 25 30

Ser Leu Thr Thr Asp Leu Gln Thr Arg Lys Glu Lys Asp Thr Pro Asn
35 40 45

Glu Asn Arg Gln Lys Leu Arg Ile Phe Tyr Gln Phe Leu Tyr Asn Asn
50 55 60

Asn Thr Arg Gln Gln Thr Glu Ala Arg Asp Asp Leu His Cys Pro Trp
65 70 75 80

Cys Thr Leu Asn Cys Arg Lys Leu Tyr Ser Leu Leu Lys His Leu Lys
85 90 95

Leu Cys His Ser Arg Phe Ile Phe Asn Tyr Val Tyr His Pro Lys Gly
100 105 110

Ala Arg Ile Asp Val Ser Ile Asn Glu Cys Tyr Asp Gly Ser Tyr Ala
115 120 125

```
Gly Asn Pro Gln Asp Ile His Arg Gln Pro Gly Phe Ala Phe Ser Arg
    130                 135                 140

Asn Gly Pro Val Lys Arg Thr Pro Ile Thr His Ile Leu Val Cys Arg
145                 150                 155                 160

Pro Lys Arg Thr Lys Ala Ser Met Ser Glu Phe Leu Glu Ser Glu Asp
                165                 170                 175

Gly Glu Val Glu Gln Gln Arg Thr Tyr Ser Ser Gly His Asn Arg Leu
            180                 185                 190

Tyr Phe His Ser Asp Thr Cys Leu Pro Leu Arg Pro Gln Glu Met Glu
        195                 200                 205

Val Asp Ser Glu Asp Glu Lys Asp Pro Glu Trp Leu Arg Glu Lys Thr
    210                 215                 220

Ile Thr Gln Ile Glu Glu Phe Ser Asp Val Asn Glu Gly Glu Lys Glu
225                 230                 235                 240

Val Met Lys Leu Trp Asn Leu His Val Met Lys His Gly Phe Ile Ala
                245                 250                 255

Asp Asn Gln Met Asn His Ala Cys Met Leu Phe Val Glu Asn Tyr Gly
            260                 265                 270

Gln Lys Ile Ile Lys Lys Asn Leu Cys Arg Asn Phe Met Leu His Leu
        275                 280                 285

Val Ser Met His Asp Phe Asn Leu Ile Ser Ile Met Ser Ile Asp Lys
    290                 295                 300

Ala Val Thr Lys Leu Arg Glu Met Gln Gln Lys Leu Glu Lys Gly Glu
305                 310                 315                 320

Ser Ala Ser Pro Ala Asn Glu Glu Ile Thr Glu Glu Gln Asn Gly Thr
                325                 330                 335

Ala Asn Gly Phe Ser Glu Ile Asn Ser Lys Glu Lys Ala Leu Glu Thr
            340                 345                 350

Asp Ser Val Ser Gly Val Ser Lys Gln Ser Lys Lys Gln Lys Leu
        355                 360                 365
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<210> 55
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Motif

<400> 55
Gln Ala Leu Gly Gly
1 5

<210> 56
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 56
actgttcgtc tccttcatca tg 22

<210> 57
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 57
ttgcttgcct gaaaaaagta tg 22

<210> 58
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 58
tgtcgatatg cgaccagtac c 21

<210> 59
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 59
caggcttaga cccaattgac c 21

<210> 60
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

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aggtaggatc cgacatcgtc ttcttattta ccg 33

<210> 61
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

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ctcttgaatt caaaactatt cctactctca cac 33

<210> 62
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 62
gccaatcggt gttttcgcag ctttc 25

<210> 63
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 63
aagaataagt tacaatccga taaatcgg 28

<210> 64
<211> 22
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 64
cagtggttga agcttaagga gg 22

<210> 65
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 65
gcaatgaata aatcataatc ttgg 24

<210> 66
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 66
tctactggga tggtagtttt c 21

<210> 67
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 67
atatcccgag gcaacagagc ttg 23

<210> 68
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 68
catctttgga actcgtttg 19

<210> 69
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 69
ctcagttgta atagttgccc 20

<210> 70
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 70
aagagtgggc tatggctgg 19

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 71
gcaactcttt ctcgtaaaat cttg 24

<210> 72
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 72
gcctccataa ctgtcatcac atc 23

<210> 73
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 73
tttcattggt catgggatgg 20

<210> 74
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 74
gacttcagag atgggtttat gc 22

<210> 75
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 75
tccatatcta gctccttcgc c 21

<210> 76
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 76
tgcgttcatt aagtaggcaa cagaaaatgg 30

<210> 77
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 77
gagaagtagt tacctttgtt ttcttacaga agagt 35